BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking to Implement the Commission's Procurement Incentive Framework and to Examine the Integration of Greenhouse Gas Emissions Standards into Procurement Policies.	Rulemaking 06-04-009 (Filed April 13, 2006)

POST WORKSHOP COMMENTS OF THE DIVISION OF RATEPAYER ADVOCATES ON PHASE 1 ISSUES

I. INTRODUCTION

Pursuant to the July 7, 2006 Administrative Law Judge Ruling on Phase 1 Post-Workshop Comments, Schedule and other Procedural matters (July 7 ruling), the Division of Ratepayer Advocates (DRA) submits the following comments. DRA has not formulated a position on all the issues covered by the July 7 ruling.

II. DISCUSSION

A. Threshold Issues

1. The advantages of adopting an EPS outweigh the disadvantages.

Because of the unknown time period until permanent carbon regulation standards can be applied in California, there is the real danger that high CO2 producing new power plants may be built, or older plants renovated, in an attempt to beat the standards and "grandfather in" these plants when permanent standards are developed. This situation may already be happening in other states.[1]

[1] "Planned TXU Plants Raise Global-Warming Concerns." Wall Street Journal July 21, 2006, p. A1.

2. An EPS serves to address the Commission's goals better than current procurement policies such as the GHG adder.

The EPS is not subject to short term changes in fuel, technology and emission costs, but makes a clear and long-term commitment to carbon dioxide reduction. The EPS sends a stronger and more direct message that the State is serious about reducing its greenhouse gas emissions.

B. Implementation and Design Issues

1. Top four priorities for design criteria.

(1) Direct California's current power plant construction and renovation decisions toward a future energy system with minimum CO2 production, thereby protecting ratepayers from the risk of the high cost of anticipated future carbon regulation; (2) be designed to produce the same technological effects as the future carbon regulation; (3) give incentives to energy efficiency and renewable energy as well as more efficient fossil fuel power plants; and (4) reduce the possibility to "game" the rules.

2. Advantages of a gateway approach.

The gateway approach, which involves exemptions for plants below a certain size and capacity factor will be the simplest and quickest to apply, at the expense of efficiency and the risk of gaming.

3. Application of the EPS to new commitments.

As power plants may have an economic life of up to 40 years, new commitments must not increase carbon dioxide production.

4. Application of the EPS to commitments of five years or longer.

It is important to not promote the construction of new fossil plants, especially those with lower efficiency. Fossil fuel plants have relatively low capital costs (countered by high operating costs). Even a 5-year threshold might not be sufficient to discourage the construction of high CO2 emission plants. If anything, the minimum unconstrained commitment should be less than five years.

5. Application of the EPS to the covered facility rather than the contracted amount.

It is necessary to apply the EPS to the covered facility because otherwise contracts might be written to divide output into small segments each of which could result in a capacity factor less than the threshold limit.

6. Covered Resources should include facilities with an annual average capacity factor of 40% or higher.

The lower the capacity factor, the more facilities will be included. DRA is unsure as to how all contracts will assure a given capacity factor. Figure 2 shows that three existing plants with higher than median CO2 emissions per kWh were run at 40 to 50 percent capacity factors in 2005. This would not be expected in an integrated system with economic dispatch. Two of these plants are in the transmission constrained Humboldt area, and the third is the now retired Hunter's Point plant in San Francisco. In an hypothetical optimum system using new equipment, one would not expect a high emission unit (peaker) to operate above a capacity factor of about 20%, the capacity factor where the total per kWh cost becomes lower for a combined cycle gas turbine.

But recognizing that the present system is not optimum, particularly in certain locations and in years of unexpectedly high electric loads, DRA suggests that the threshold for the EPS be at 40%, with a possible exception for short-term continued operation of high emission plants in transmission constrained areas. As will be discussed below regarding Figure 2 of these comments, the relationship of capacity factor to fuel use and thus CO2 production is not clear under the present system of plant dispatching.

DRA believes that there should be no exemption for advanced coal or other technologies. There should be no special treatment for any fossil fuel technology, with the exception of combined cycle gas turbines which incorporate dry cooling, in which case an engineering based analysis should be used to allow the emission rate to reflect the loss of efficiency due to dry cooling. Dry cooling has other environmental advantages,

including water saving and the reduction of thermal pollution (heating) of natural bodies of water.

7. Should the EPS apply to the blend of resources or should each resource be required to meet the EPS?

Each resource should be required to meet the EPS.

8. How should the EPS treat partial contracts?

The rules must be set to prevent evasion of the EPS by gaming methods, such as "dividing" one large plant into several that fall below the minimum size limit, or writing contracts assigning none of a plant's emissions to a "clean" contract and selling the remaining output into a different market through a "dirty" contract.

9. Application of the EPS based on size of the resource.

a. The MW level of the "small unit" exemption under the proposal.

DRA recommends that the "small unit" exemption of less than 25 MW, as contained in the June 30th Staff Straw Proposal, be lowered to less than 5 MW.

Whatever MW value chosen by the Commission for this parameter of the overall EPS, it will be largely policy based, with the lower the MW value the more effective the EPS will be in reducing GHG emissions.

DRA believes that to go lower than 5 MW for exemptions is unnecessary since most of small unit projects less than 5 MW will be subject to the program and technology criteria established by and the through the Self-Generation Incentive Program (SGIP).

The SGIP, in effect since 2001 and "funded" at least through the end of 2008, includes natural-gas fueled Combined Heat and Power (CHP) that are certain to be of higher efficiency (on an effective heat rate basis) than: (a) natural gas fueled central power plants (peaker or baseload); and (b) some of the existing or new "PURPA machines" that are given QF status.

Whether the Commission choses a 5MW or 25 MW definition for establishing exemptions for "small units," all natural gas-fueled projects, new and existing will remain

subject CARB regulations (which currently cover all emissions other than CO2). CARB regulations, in term are subject to the continuous updating by local Air Quality Districts to account for CA regional air quality concerns.

b. The effect of the setting the exemption level for small units at 5MW versus 25 MW.

This would be to reduce GHG emissions of the "fleet" of new and existing natural gas fueled "co-generation" facilities that may have heat rates which are higher than the standard set by the overall EPS. As such, DRA believes that the level of 5MW represents a CPUC policy position which more aggressively limits and reduces GHG emissions than the 25 MW level. Basing the exemption on the MWs delivered to the grid.

c. Subtract out self generation? If yes, what data?

DRA has not yet formulated a position on this issue

d. Basing the exemption of the size of the contract constructed or underlying the unit-specific contract, rather than the size of the contract?

DRA has not yet formulated a position on this issue

e. No size exemption for unspecified contracts.

DRA has not yet formulated a position on this issue

10. Two separate standards for new and existing resources.

DRA does not support the immediate removal from service of existing plants with a high CO2 emission rate, but does support preventing new plants with high emission rates from being constructed. At an intermediate level, DRA does not support long term contracts being awarded to existing high emission rate plants that could extend their service life indefinitely.

11. Cogeneration Thermal Load Allowance.

DRA supports the formula presented at the workshop**.**

12. Net emission rates for renewables.

DRA supports the approach of GPI on this issue. Most renewables have no CO2 emissions. Biomass and biofuel combustion do technically emit CO2, but that carbon was recently removed from the atmosphere, and is not a long-term net addition to atmospheric CO2 as is produced by burning fossil fuels.

13. Unspecified contracts.

To avoid "gaming", unspecified contracts should be treated as if they were from a facility that doesn't meet the EPS CO2 per MWh standard.

14. Case by case safety review for reliability issues.

DRA has not yet formulated a position on this issue.

15. Application of the EPS to QFs and other jurisdiction entities to an EPS, including multi-jurisdictional entities.

DRA has not yet formulated a position on this issue

16. Documentation required "at the gate" for small size exemption, whether a new commitment meets the covered resource definition, claiming the cogeneration thermal load credit and other requirements of the EPS.

DRA has not yet formulated a position on this issue

17. Null power.

Null power is presumably used here to mean electric energy that has already been stripped of its renewable attributes. It should be considered the equivalent of the energy from the power source displaced. This will usually be a non-complying plant from a CO2 emissions standard.

18. Other comments on staff straw proposal.

The information collected by the data groups is valuable and critical. The chart prepared by the data group "Spreadsheet of Existing Emission Rates"[2] is reproduced below, with minor additions. This graph has the "x" value based on cumulative electric megawatt-hours produced with the plants ranked from least to most CO2 production per kWh. The "y" axis is the CO2 production in lbs/MWh. These axes produce a graph with the area under the line representing the total CO2 production. The bottom vertical line shows what the CO2 emissions would be if every natural gas powered plant operated at the heat rate of the best plant (6793 BTU/kWh) and thus had the same CO2 emission rate (0.79 lbs/kWh). This would result in a theoretical potential reduction of annual CO2 production from 31 to 24 million tons, or a 35% reduction. But this ignores the economic penalty of operating a CCGT as a peaking plant due to the higher CCGT capital costs. By "correcting" for this by allowing for higher CO2 for peakers, but setting it at a reasonable peaker heat rate of 10,000 BTU/kWh, the potential theoretical reduction would be from 31 to 27 million tons of CO2 per year, or a 13% reduction.

[2] http://www.cpuc.ca.gov/static/hottopics/1energy/r0404003.htm

Figure 1: Energy Produced and CO2 Emission Rate

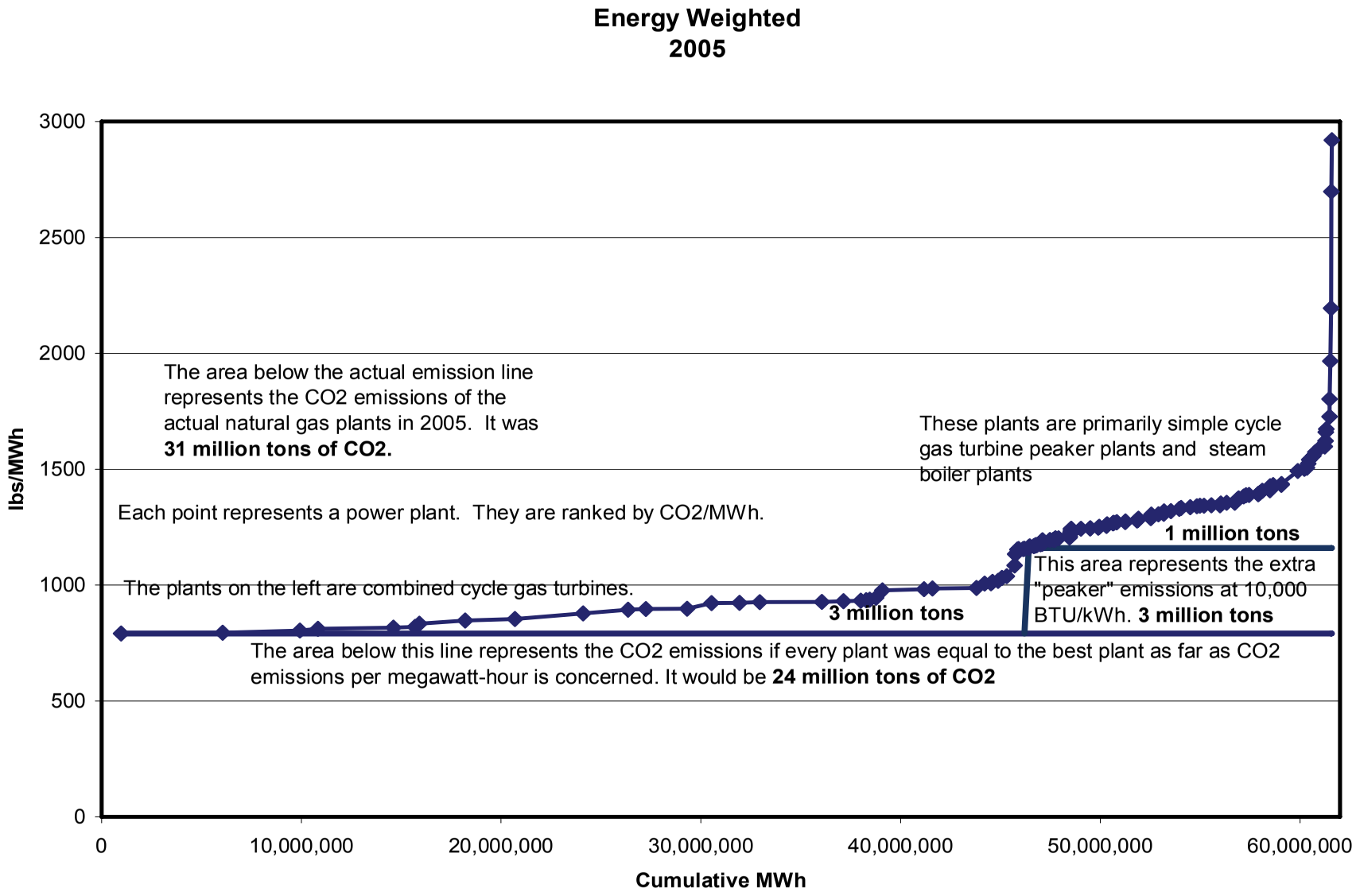
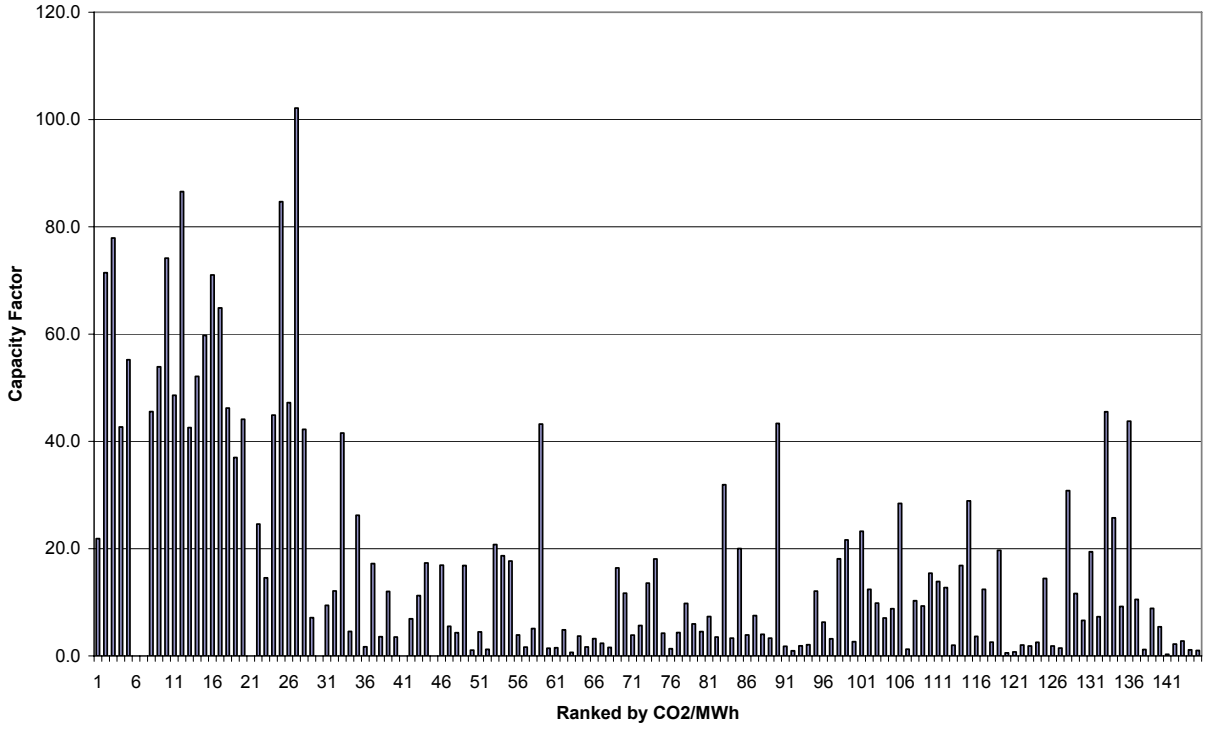


Figure 2: Capacity Factor and CO2 Emission Rates

This figure which is shown on the next page, was created from data on the "Spreadsheet of Existing Emission Rates. One would expect that the power plants with the lowest CO2 emission rates, on the left on the chart, would have higher capacity factors. This is because the emission rate is proportional to the fuel consumption, and the system should be following least cost dispatch. In other words, the last plants to be turned on would be those that consume the most fuel per kWh of electricity produced, and thus the highest fuel cost per kWh, and these would also be the plants emitting the most CO2 per kWh. This general pattern is apparent in figure 2. The 31 plants on the left (23% of the plants), those with the lowest CO2 emissions and highest efficiency, are operated more than most plants. These 31 plants, presumably all combined cycle gas turbines, represent 37% of the installed capacity (10,885 of 29,321MW) and produced 72% of the electric energy from all the plants shown. (These numbers are from the spreadsheet but on not shown on the chart)

But substantial deviations from least cost dispatch are evident on Fig. 2. Some of these deviations are for known reasons. Some of the high emitting plants are in transmission constrained areas, and have to be run more than economics would predict. This accounts for some of the peaks on the right side of the chart. This implies that increased transmission capacity in some areas could have a good effect on the State's CO2 emissions. On the other hand, at least one new, "clean" plant came into operation during 2005, and thus has a low capacity factor for that year. Also plants number 6 and 7 did not have capacity factors available, even though their low emission rates would indicate that they should have run at high capacity factors. These factors account for some of the low capacity factors on the left side of the chart. However, the chart seems to indicate that these factors alone can't explain all of the "scatter" on this measure. It would appear that a substantial portion of the power plants are not being run by least-cost dispatch, for whatever reasons. In addition to adding to fuel and thus presumably ratepayer costs, this also increases CO2 production. Although probably beyond the scope of this proceeding, further investigation of this phenomenon is warranted.

Figure 2. Capacity Factor and CO2 Emission Rates by Power Plant



III. CONCLUSION

For the foregoing reasons, DRA respectfully requests that the Commission adopt its recommendations.

Respectfully submitted,

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I hereby certify that I have this day served a copy of "**POST WORKSHOP COMMENTS OF THE DIVISION OF RATEPAYER ADVOCATES ON PHASE 1 ISSUES"** in **R.06-04-009** by using the following service:

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Executed on July 27th, 2006 at San Francisco, California.

/s/ ANGELITA MARINDA
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